# User Application for Samsung Applications into a TV Set

**Version 2.21**

**Samsung Smart TV**

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# Preface

## ▪ Purpose of Document

This document describes how to upload Samsung Smart TV applications to a TV set for testing on the full target system.

## ▪ Target Readers

This document is aimed at developers who are already familiar with the Samsung Smart TV SDK and have created a application that works with the emulator.

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# 1. Introduction

Using the Samsung Smart TV SDK (SDK), it is very easy to test the basic functioning of a application using the emulator. This enables incremental development by quickly showing the results of a code change. But the emulator can never be an exact simulation of the TV, because it runs on different hardware. The only way to be sure of how a application will behave on a Samsung TV set is to run it inside a Samsung TV set.

The TV environment is different from the PC environment in at least the following ways:

- Less memory is available - applications may run out of memory
- Response to remote control keys happens with different timing – responsiveness to user key presses can be tested
- Only certain remote control keys are allocated to the application when running on the TV set. For details, please see the common widget API function registKey(), and the section.
- A real TV picture can be seen – blending of widget graphics over a TV picture can be evaluated
- Video and audio playback may behave differently due to using different hardware
- Browser behaviour may be different if there are different browser versions in the SDK and in the TV

The User Application feature of Smart Hub allows developers to upload applications from their own local server directly to the TV for testing, without affecting any other users of Samsung Smart TV. This document describes to set up the TV and a development PC so that the User Application feature will work correctly.

# 2. PC Configuration

## 2.1. Web Server installation

During the installation of the SDK, there is an option to install the Apache web server. This document will assume that Apache being used. If the install of Apache was skipped during the SDK install, the user can either re-install the SDK choosing also to install Apache, or manually install Apache (version 2.2.11 is recommended for use with the SDK). When installing the Apache web server, it is recommended to choose all default installation options. It is also be possible to use a different web server if preferred.

## 2.2. Setting SDK Preferences

The SDK must be configured correctly to set the correct location for uploading widgets. Firstly, the emulator must be closed before preferences can be set. Then select the “Preferences” option from the “Tools” menu. This gives several further tabs listed on the left of a dialogue box.

On the Package Settings tab, selecting the option “Use the Apache (2.2.11) installation folder” will set the location for uploading widgets to the default Apache installation folder. This is the recommended option for those using Apache

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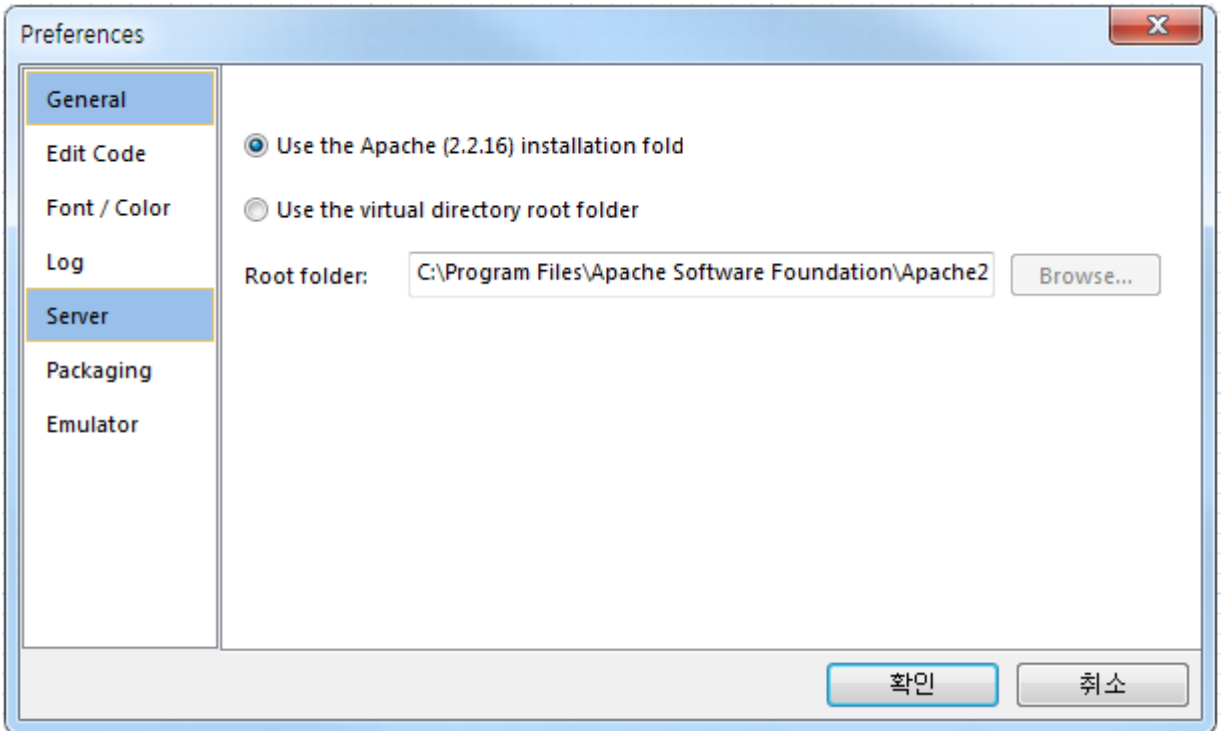
with a default configuration.




It is also possible to choose a different folder for uploading applications. This is done by selecting the option “Use the virtual directory root folder”. When this option is selected, the user may use the “Browse” button to select a directory. This can either be a directory that is directly accessed by a web server or another directory where files can be stored for later upload (for example by FTP).

## 2.3. Preparing Applications for Upload

This section assumes that a application is already developed and tested using the emulator. Applications uploaded directly from the development PC to a TV set are known as “User Application”. Firstly the application configuration must indicate that it is a User Application. This is done by adding a line to the config.xml file, between the <widget> and </widget> tags, as follows:

**<type>user</type>**

To package the User Application for uploading to a TV, right-click on the widget name in the Project Explorer window and select “Package…”.

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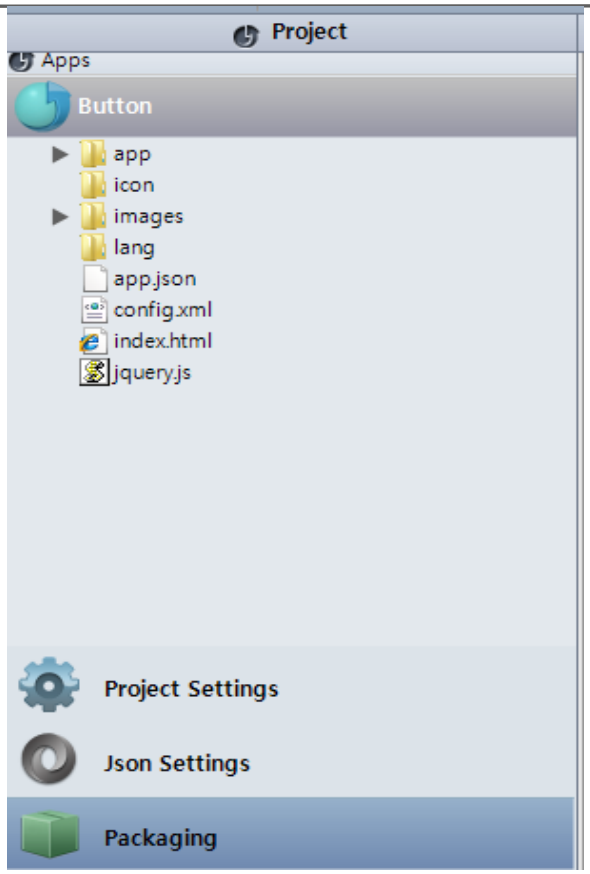


A “Packaging” area will be shown. Enter the application name and version number, select a region where the application is to be used, and entering the package date (the default is today’s date). These settings determine the file name that is used for the package. Then select **“Update the packaged files on the server”**, and enter a title and description for the widget. The language file settings are used for language translation when developing a multi-lingual application - they are not described by this document.

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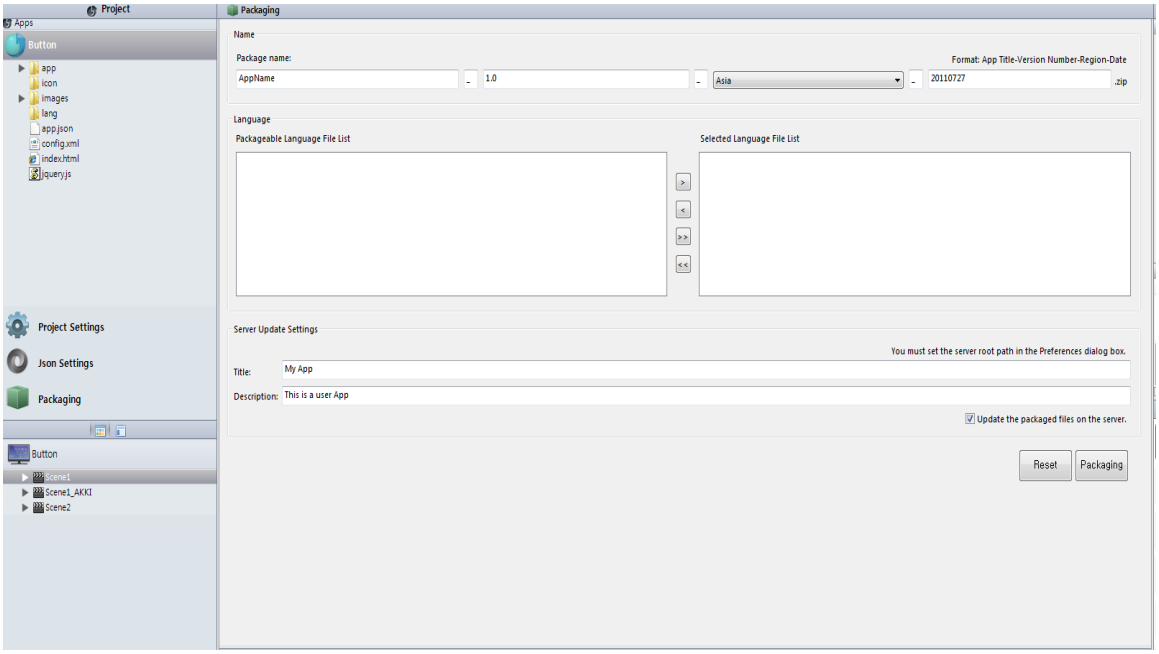


After pressing “OK”, the message “Packaging complete” should be displayed. If using Apache with the default configuration, and the package settings set to use the default installation folder, the packaged application is now available on the Apache web server. If a different folder was configured, the packaged application is now available in the configured folder. The file “widgetlist.xml”, the folder “widget” and its contents must be transferred to the web server so that the can be accessed by:

http://<ip address>/widgetlist.xml

http://<ip address>/widget/…

Please note multiple applications can be packaged and stored on the web server for upload together. Each one will be given a description in the file “widgetlist.xml” and the files for each will be stored in the “widget” folder.

# 3. TV Configuration

## 3.1. Network Setup

Firstly, the TV must be connected to a network and configured with an IP address. If this is already done, please move to the next section.

Connect the TV by Ethernet cable to an IP network that has access to the web server where the packaged application is stored. In the TV Settings menu, select “Network”, and enter “Network Setup”. Choose either “Automatic” configuration (for DHCP) or “Manual” configuration (for fixed IP address). For manual configuration, enter IP address, subnet mask, gateway and DNS servers. To check that the network is functioning correctly, select “Network Test”. If this fails, please contact your network administrator; if it succeeds, the TV is correctly connected to the network. Press the Return key to go back to the menu.

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## 3.2. Developer Login

Then press the “SMART HUB” button in remote control. The Samsung Smart Hub should be displayed. Enter the “Login”.

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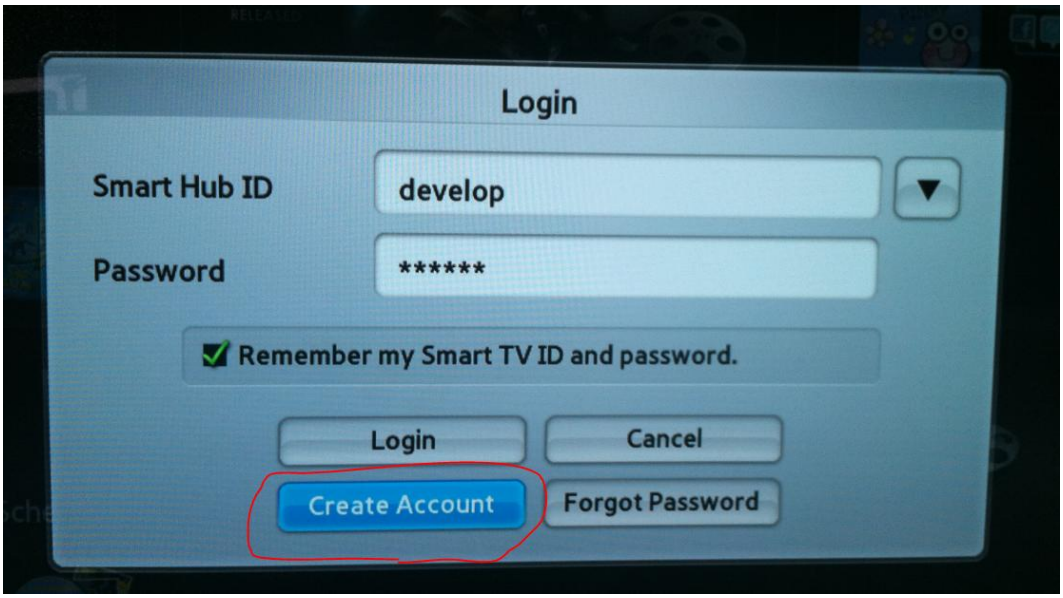
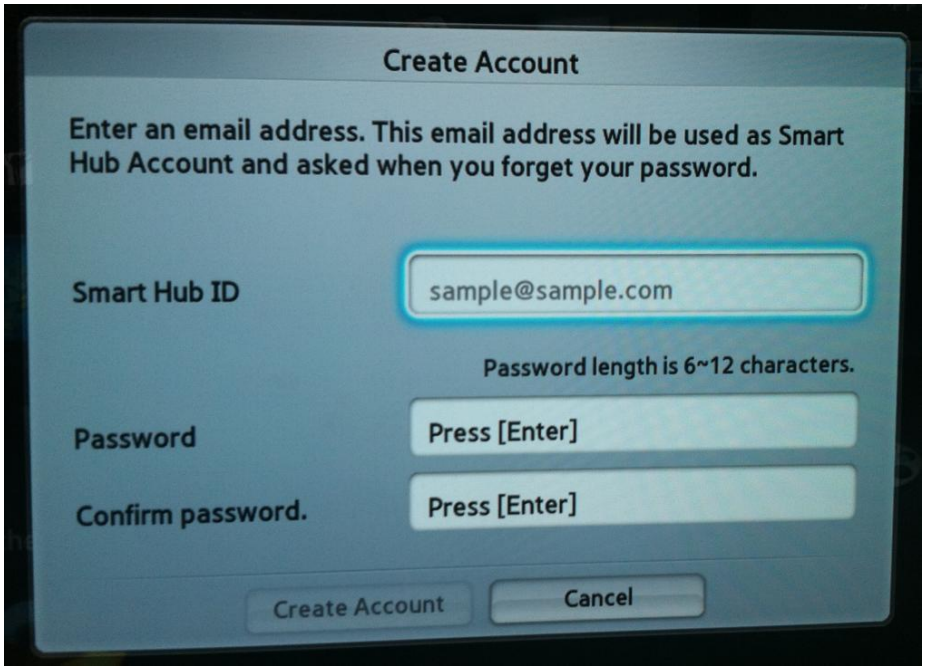



To activate the User Application feature, the login name must be set to "**develop**".

Select the "Create Account" button.

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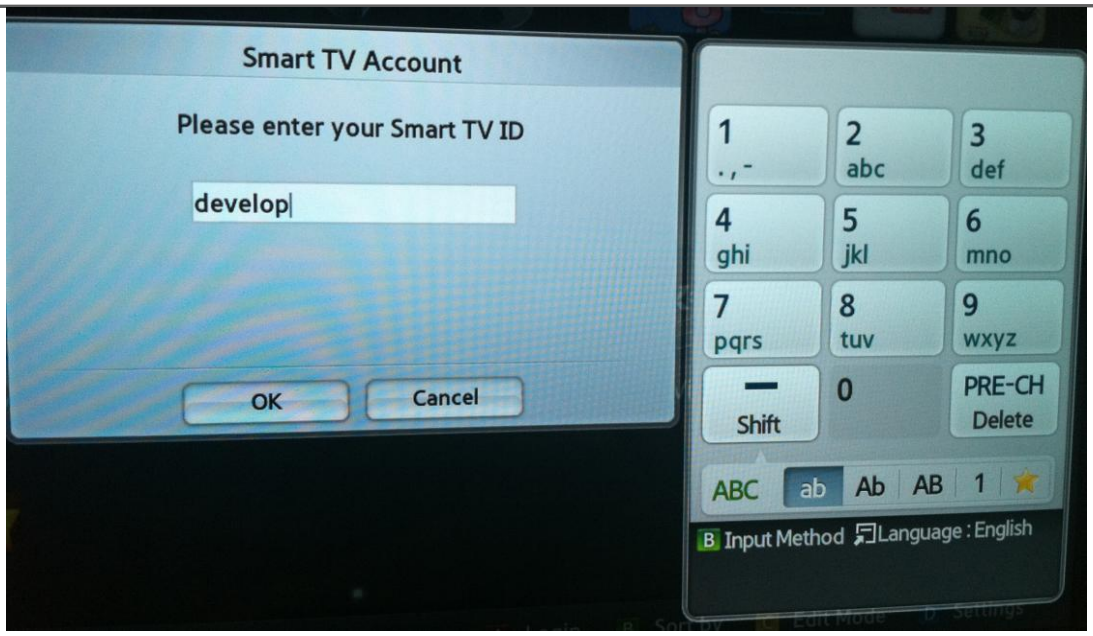
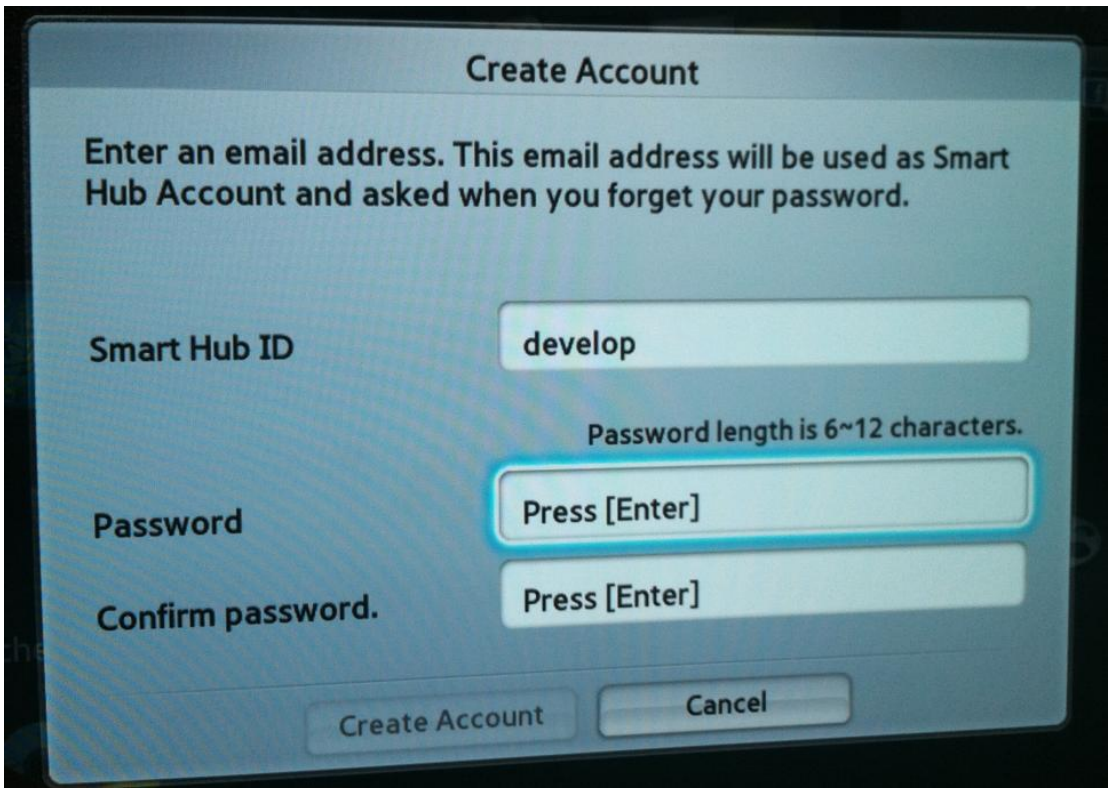



Enter the name “develop” using the numeric keys on the remote controller (in the same style as a mobile telephone) and press select




Choose a 6~12 password (anything is OK).

Please press the "Create Account" button.

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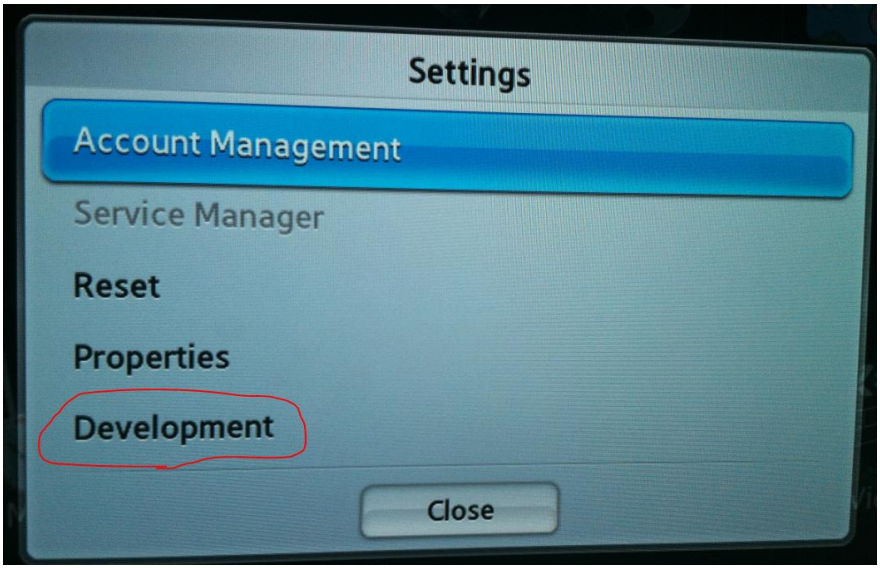
Next, log in to the “develop” account.

If this is successful, the name “develop” should be displayed at the bottom-left corner of the screen.

Next enter the “Settings”.




A new option, “Development”, should have appeared at the end of the menu.

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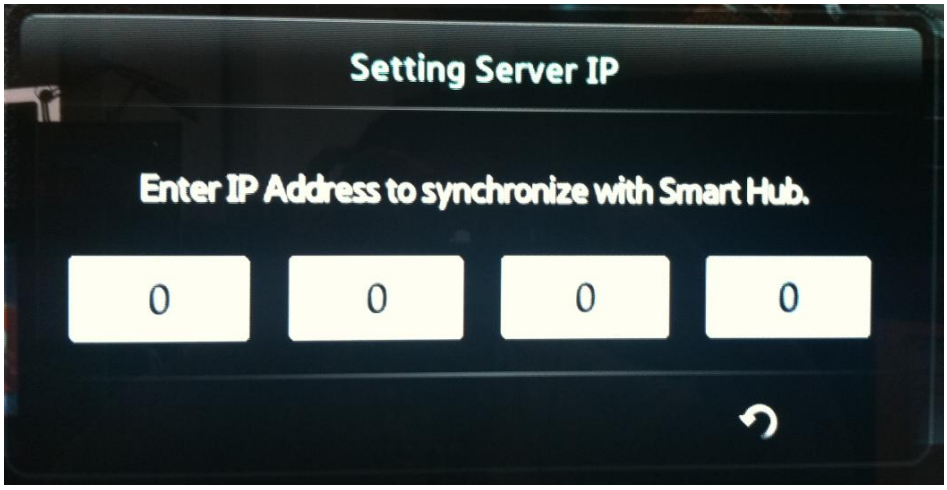
Select it and choose the option “Setting Server IP”.




In the boxes, enter the IP address of the web server that contains the packaged application.

When this is finished, press the return button on the remote controller.

The information entered in these steps is saved in the TV memory. After switching the TV power off and back on, press the “Samsung Smart TV” button. Then, Smart Hubshould be displayed again. All that is needed is to log in to the “develop” account again by pressing the red button from Smart Hub display. Select the “develop” account and enter the 6~12 digit password.

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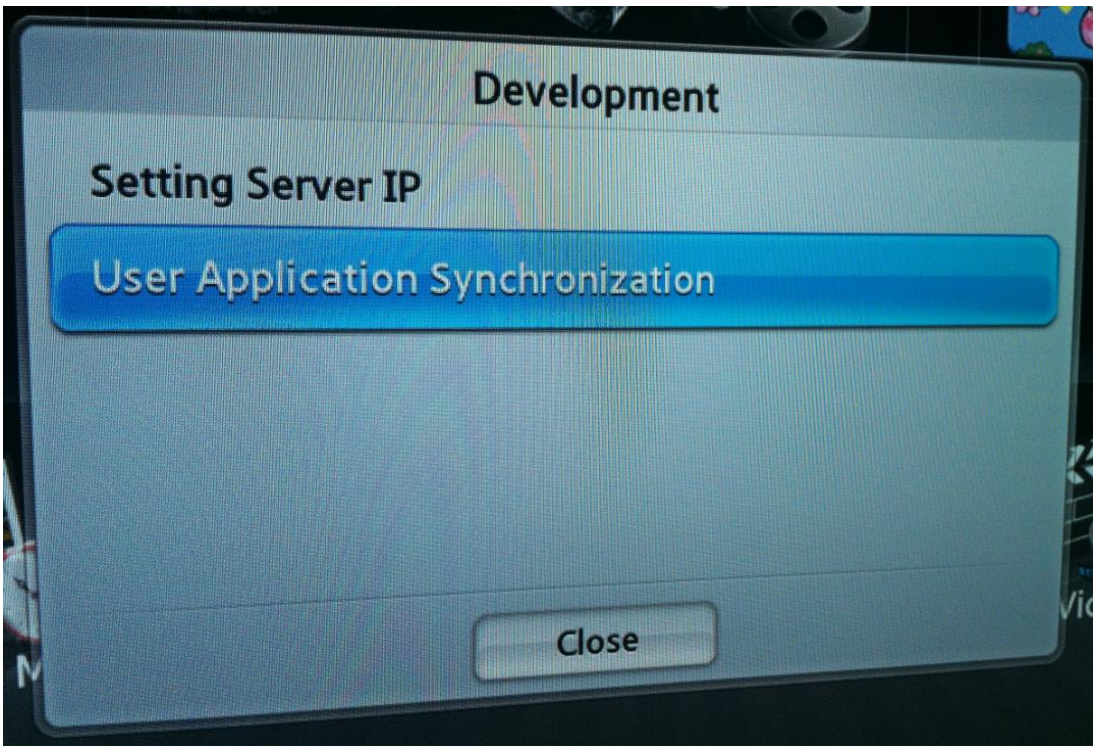
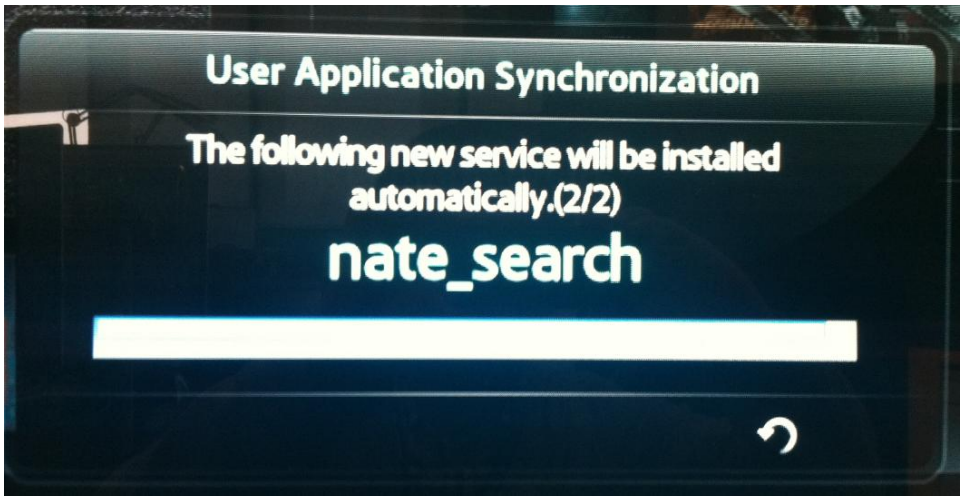
## 3.3. Installing Applications




From the “Development” menu in the “Settings”, select “**User Application Synchronization**”.




The TV should indicate that it is installing a new service, and will display the name of the user App.

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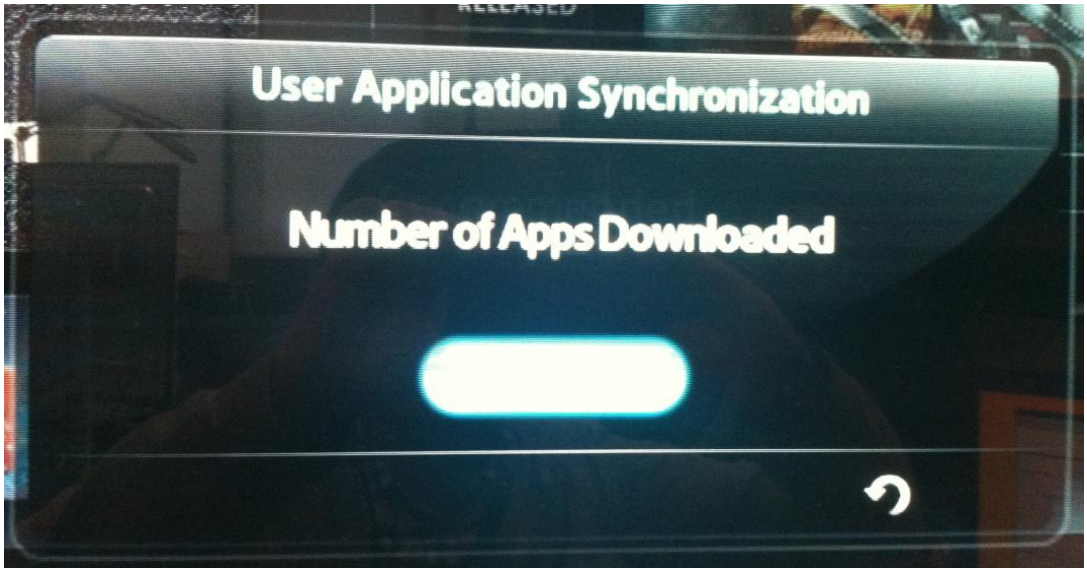
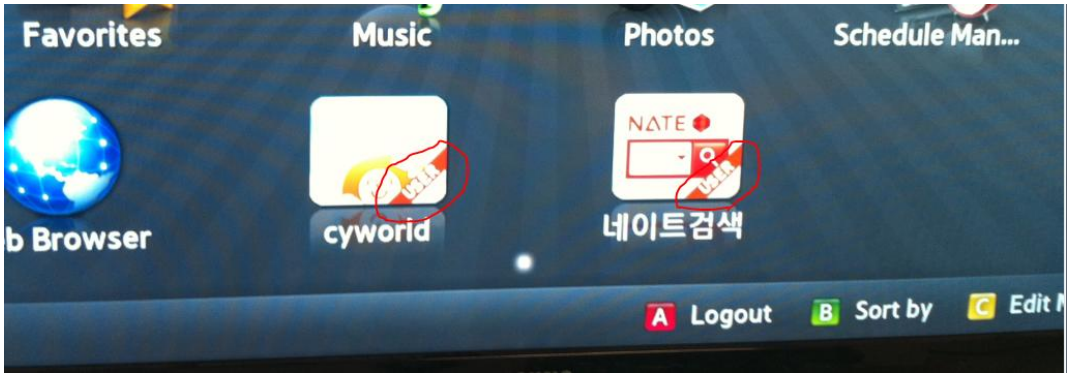



When the install is finished, select “Complete” and press the Return key on the remote controller two times to exit the “Settings”.




If this was successful, a new application will be available in Smart Hub.

It will have the text “**USER**” on a **red background** at the bottom, and it will display the icon of App.

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## 3.4. Testing

From this point, the application can be tested on the TV set. Entering the application (by selecting it and pressing the Enter key on the remote controller) will load the index.html file in the TV web browser, in the same way as starting the emulator from the SDK on the PC. Pressing the Return key on the remote controller will return to Smart Hub display, and pressing the Exit key will exit Samsung Smart TV (unless the key is handled by the widget and the API function “blockNavigation” has been used).

After further changes have been made to the application using the SDK, the application must be packaged again (see section 2.3), and then the TV must be synchronised with the server again (see section 3.3). After these steps, the updated application is available in Smart Hub for further testing.

## 3.5. Deletion of User Application

Sometimes, on TV, User Application can bring some troubles because there are many errors. On this time, you can delete the User Applications at one time. First, connect the Ethernet cable, and when you start Samsung Smart TV, you can see the “Settings”. Second, you login with “develop” id and password and enter the “Settings”. Third, you can see the “Edit Mode” menu at the below, and then push the yellow button. Lastly, choose the User Application that you want to delete and press the enter button. After these steps, you can delete User Application on TV.

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